

PATENT SPECIFICATION

DRAWINGS ATTACHED

888.038



Date of Application and filing Complete Specification: Dec. 16, 1959.

No. 2 23/59.

Complete Specification Published: Jan. 24, 1962.

Index at acceptance:—Class 81(1), B2(L: N: P: S: T), B(3: 6).

International Classification:—A61k.

COMPLETE SPECIFICATION

Medicinal Tablet

I, WILLIAM WARREN TRIGGS, C.B.E., a British subject, of Messrs. Marks & Clerk, 57 & 58, Lincoln's Inn Fields, London, W.C.2, do hereby declare the invention (Communicated by The Wander Company, a United States Company, of Prudential Plaza, Chicago 1, Illinois, United States of America) for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a novel and improved medicinal tablet and more particularly to a tablet other than an implantation tablet containing substantially segregate quantities of the same or different ingredients. The formulation of an implantation tablet would normally be quite different from, for instance, a tablet for oral administration, and this specification does not relate to an implantation tablet.

It is frequently desired to provide medicinal or pharmaceutical compositions in solid, dosage-unit form wherein each dosage unit contains segregated quantities of the ingredients of the preparation. For example, one type of medicinal tablet or pill which is useful for delayed action or multiple dosage medication is the so-called tablet-within-a-tablet or "double tablet" construction which consists of an innermost core tablet, a thin enteric coating around the core tablet, and an outermost shell or layer. Upon oral administration, the medicinal ingredients in the outermost shell are readily assimilated in the gastro-intestinal tract to provide immediate therapy. After a predetermined period of time, the gastrointestinal fluids dissolve the enteric coating on the inner core portion of the tablet and the ingredients of the latter are then available for assimilation. Thus, a sustained or delayed action effect is realized which is equivalent to the result which would be obtained by repeated administration of conventional tablets ver a period of time. Another type of medicinal tablet which is also employed in

certain instances is the so-called layered tablet which consists of two or more superimposed layers of medicinal ingredients compressed together to form a unitary tablet. A layered or multiple compressed tablet of this type is used primarily in situations where it is necessary to separate or segregate two different pharmaceutical ingredients which are to be administered at the same time but which have an adverse effect upon each other so that they cannot be intimately comingled beforehand. For example, an acidic medicinal ingredient may have a detrimental effect on a companion ingredient which is susceptible to acid action.

However, both the tablet-within-tablet and the layered tablet constructions have serious limitations. For example, in the tablet-within-tablet the inherent geometry of the construction is such that the quantity of medicinal ingredient or ingredients forming the outer shell of the tablet is always substantially greater than the quantity of material forming the inner core of the tablet. In a typical instance, the dosage content in the outer shell may be as much as twice as great as the dosage content of the inner core tablet. Moreover, in the tablet-within-a-tablet construction it is necessarily the outer shell portion of the tablet which is first released and assimilated in the gastrointestinal tract. It will readily be understood that these limitations may frequently restrict the scope and utility of this tablet form.

In the layered tablet, the chief disadvantages are as undesirable merging of the ingredient at the interface between the layers and also a poor degree of control over the relative quantities of the ingredients in the respective layers. These disadvantages are occasioned by the necessity of producing a layered tablet in a single compression step so as to obtain a unitary tablet having the required mechanical strength and coherence. Generally speaking, the layered tablet is formed by successively introducing into a die cavity measured amounts of the respective

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